

CLAIMS

What is claimed is:

1. A stent comprising:

5 a first section, a second section and at least one securement member, the
at least one securement member disposed about at least one region of the first section
and at least one region of the second section, the at least one securement member having
an uncrimped diameter and a crimped diameter, the crimped diameter being less than
the uncrimped diameter, when the at least one securement member is in the crimped
10 diameter at least a portion of an inner surface of the at least one securement member is
fixedly engaged to the at least one region of the first section and the at least one region
of the second section, in the crimped diameter the at least one region of the first section
and the at least one region of the second section being immediately adjacent one
another.

2. The stent of claim 1 wherein at least one of the first section and second section is
15 at least partially constructed of at least one wire.

3. The stent of claim 1 wherein at least one of the first section and second section is
at least partially constructed of a plurality of struts, wherein adjacent struts define at
least one cell opening.

4. The stent of claim 1 wherein the at least one region of the first section and the at
20 least one region of the second section define a seam therebetween.

5. The stent of claim 4 wherein at least a portion of the at least one region of the
first section and at least a portion of the at least one region of the second section
comprise at least one weld along the seam.

6. The stent of claim 4 wherein at least a portion of the at least one region of the
25 first section and at least a portion of the at least one region of the second section are
fused together along the seam.

7. The stent of claim 5 wherein the at least a portion of the at least one region of the
first section and the at least a portion of the at least one region of the second section and
the at least a portion of the inner surface of the at least one securement member
30 comprise the at least one weld.

8. The stent of claim 1 further comprising at least one weld, the at least one weld
positioned between the at least a portion of the inner surface of the at least one

securement member and at least one portion of at least one of the at least one region of the first section and the at least one region of the second section.

9. The stent of claim 8 wherein the at least one weld is selected from at least one member of the group consisting of: at least one seam weld, at least one spot weld and
5 any combination thereof.

10. The stent of claim 8 further comprising at least one strengthening member, at least a portion of the at least one strengthening member positioned between the at least a portion of an inner surface of the at least one securement member and the at least one portion of at least one of the at least one region of the first section and the at least one
10 region of the second section.

11. The stent of claim 10 wherein the at least one weld is positioned between the at least a portion of the inner surface of the at least one securement member, the at least one portion of at least one of the at least one region of the first section and the at least one region of the second section, and the at least a portion of the at least one
15 strengthening member.

12. The stent of claim 1 further comprising at least one strengthening member, the at least one strengthening member comprising a first portion and a second portion, the first portion of the at least one strengthening member positioned between the at least a portion of an inner surface of the at least one securement member and at least one
20 portion of at least one of the at least one region of the first section and the at least one region of the second section, the second portion extending beyond an end of the at least one securement member.

13. The stent of claim 12 wherein at least one of the first portion and the second portion of the at least one strengthening member has a length of about 2 mm.

25 14. The stent of claim 12 wherein the at least one strengthening member is at least partially constructed of at least one metal selected from the group consisting of nitinol, stainless steel, platinum, gold and any combination thereof.

15. The stent of claim 12 wherein the at least one strengthening member is at least partially radiopaque.

30 16. The stent of claim 12 wherein the at least one strengthening member has a thickness, the thickness being about 0.01 inches to about 0.02 inches.

17. The stent of claim 12 wherein the at least one strengthening member has a thickness, the thickness being about 0.015 inches.
18. The stent of claim 1 wherein at least one of the first section and second section is characterized by being self-expandable, balloon expandable, hybrid expandable and any combination thereof.
19. The stent of claim 1 wherein the first section is a balloon expandable stent body and the second section is a self-expandable stent body.
20. The stent of claim 1 wherein at least one of the first section and second section is at least partially constructed of a shape memory material.
21. The stent of claim 1 wherein at least one of the first section and second section is at least partially constructed of nitinol.
22. The stent of claim 1 wherein the at least one securement member is at least partially constructed of the group consisting of: stainless steel, nickel, titanium, gold, platinum, and any combinations thereof.
23. The stent of claim 1 wherein the at least one securement member is at least partially constructed of nitinol.
24. The stent of claim 1 wherein the at least one securement member is at least partially radiopaque.
25. The stent of claim 1 wherein the at least one securement member has a thickness the thickness being about 0.001 inches to about 0.01 inches.
26. The stent of claim 1 wherein the at least one securement member has a thickness the thickness being about 0.003 to about 0.007 inches.
27. The stent of claim 1 further comprising a third section, the at least one securement member disposed about the at least one region of the first section, the at least one region of the second section, and at least one region of the third section, when the at least one securement member is in the crimped diameter the at least a portion of the inner surface of the at least one securement member is fixedly engaged to the at least one region of the first section, the at least one region of the second section and the at least one region of the third section.
28. The stent of claim 1 wherein at least a portion of the stent is coated with at least one therapeutic agent.

29. The stent of claim 28 wherein the at least a portion of the stent is at least a portion of the at least one securement member.

30. The stent of claim 28 wherein the at least one therapeutic agent is at least one non-genetic therapeutic agent selected from at least one member of the group consisting of: anti-thrombogenic agents such as heparin, heparin derivatives, urokinase, and PPACK (dextrophenylalanine proline arginine chloromethylketone); anti-proliferative agents such as enoxaprin, angiopeptin, monoclonal antibodies capable of blocking smooth muscle cell proliferation, hirudin, and acetylsalicylic acid; anti-inflammatory agents such as dexamethasone, prednisolone, corticosterone, budesonide, estrogen, sulfasalazine, and mesalamine; antineoplastic/antiproliferative/anti-miotic agents such as paclitaxel, 5-fluorouracil, cisplatin, vinblastine, vincristine, epothilones, endostatin, angiostatin and thymidine kinase inhibitors; anesthetic agents such as lidocaine, bupivacaine and ropivacaine; anti-coagulants such as D-Phe-Pro-Arg chloromethyl keton, an RGD peptide-containing compound, heparin, antithrombin compounds, platelet receptor antagonists, anti-thrombin antibodies, anti-platelet receptor antibodies, aspirin, prostaglandin inhibitors, platelet inhibitors and tick antiplatelet peptides; vascular cell growth promoters such as growth factor inhibitors, growth factor receptor antagonists, transcriptional activators, and translational promoters, vascular cell growth inhibitors such as growth factor inhibitors, growth factor receptor antagonists, transcriptional repressors, translational repressors, replication inhibitors, inhibitory antibodies, antibodies directed against growth factors, bifunctional molecules consisting of a growth factor and a cytotoxin; bifunctional molecules consisting of an antibody and a cytotoxin; cholesterol-lowering agents; vasodilating agents; and agents which interfere with endogenous vascoactive mechanisms, and any combinations thereof.
31. The stent of claim 28 wherein the at least one therapeutic agent is at least one genetic therapeutic agent selected from at least one member of the group consisting of: anti-sense DNA and RNA; DNA coding for anti-sense RNA, tRNA or rRNA to replace defective or deficient endogenous molecules; angiogenic factors including growth factors such as acidic and basic fibroblast growth factors, vascular endothelial growth factor, epidermal growth factor, transforming growth factor α and β , platelet-derived endothelial growth factor, platelet-derived growth factor, tumor necrosis factor α , hepatocyte growth factor and insulin like growth factor; cell cycle inhibitors including

CD inhibitors, thymidine kinase ("TK") and other agents useful for interfering with cell proliferation; at least one of the family of bone morphogenic proteins ("BMP's") such as BMP-2, BMP-3, BMP-4, BMP-5, BMP-6 (Vgr-1), BMP-7 (OP-1), BMP-8, BMP-9, BMP-10, BMP-11, BMP-12, BMP-13, BMP-14, BMP-15, and BMP-16. Any of BMP-2, BMP-3, BMP-4, BMP-5, BMP-6 and BMP-7; dimeric proteins such as homodimers, heterodimers, or combinations thereof, alone or together with other molecules; molecules capable of inducing an upstream or downstream effect of a BMP such as "hedgehog" proteins, or the DNA's encoding them and any combinations thereof.

32. The stent of claim 28 wherein the at least one therapeutic agent is at least one type of cellular material selected from at least one member of the group consisting of: cells of human origin (autologous or allogeneic); cells of non-human origin (xenogeneic) and any combination thereof

33. The stent of claim 28 wherein the at least one therapeutic agent comprises at least one polymer coating, the at least one coating selected from at least one member of the group consisting of: polycarboxylic acids; cellulosic polymers, including cellulose acetate and cellulose nitrate; gelatin; polyvinylpyrrolidone; cross-linked polyvinylpyrrolidone; polyanhydrides including maleic anhydride polymers; polyamides; polyvinyl alcohols; copolymers of vinyl monomers such as EVA; polyvinyl ethers; polyvinyl aromatics; polyethylene oxides; glycosaminoglycans; polysaccharides; polyesters including polyethylene terephthalate; polyacrylamides; polyethers; polyether sulfone; polycarbonate; polyalkylenes including polypropylene, polyethylene and high molecular weight polyethylene; halogenated polyalkylenes including polytetrafluoroethylene; polyurethanes; polyorthoesters; proteins; polypeptides; silicones; siloxane polymers; polylactic acid; polyglycolic acid; polycaprolactone; polyhydroxybutyrate valerate and blends and copolymers thereof; coatings from polymer dispersions such as polyurethane dispersions (BAYHDROL[®], etc.), fibrin, collagen and derivatives thereof; polysaccharides such as celluloses, starches, dextrans, alginates and derivatives; hyaluronic acid; squalene emulsions; polyacrylic acid, a copolymer of polylactic acid and polycaprolactone; medical-grade biodegradable materials such as PGA-TMC, Tyrosine-Derived Polycarbonates and arylates; polycaprolactone co butyl acrylate and other co polymers; Poly-L-lactic acid blends with DL-Lactic Acid; Poly(lactic acid-co-glycolic acid); polycaprolactone co PLA; polycaprolactone co butyl

acrylate and other copolymers; Tyrosine-Derived Polycarbonates and arylate; poly amino acid; polyphosphazenes; polyiminocarbonates; polydimethyltrimethylcarbonates; biodegradable CA/PO₄'s; cyanoacrylate; 50/50 DLPLG; polydioxanone; polypropylene fumarate; polydepsipeptides; macromolecules such as chitosan and

- 5 Hydroxylpropylmethylcellulose; surface erodible material; maleic anhydride copolymers; zinc-calcium phosphate; amorphous polyanhydrides; sugar; carbohydrate; gelatin; biodegradable polymers; and polymers dissolvable in bodily fluids; and any combinations thereof.